

Department of Water and Power



the City of Los Angeles

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3/20/07 BdWrshp Item 8
Water Recycling
Deadline: 3/27/07 5 pm

March 27, 2007

Ms. Tam M. Doduc, Chair and Members
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812-0100

Attention: Ms. Song Her, Clerk to the Board

Dear Chair Doduc and Members of the Board:

Subject: **March 20, 2007 BOARD MEETING Agenda Item 8, Workshop
Regarding Development of a Statewide Water Recycling Policy**



The Los Angeles Department of Water and Power (LADWP) applauds the leadership demonstrated by the State Water Resources Control Board (State Board) in its consideration of developing a statewide water recycling policy, and appreciates the opportunity to provide comments on this effort. LADWP believes that timely development of a robust statewide recycled water policy is essential to advancing the use of recycled water in California. Water Recycling 2030, Recommendations of California's Recycled Water Task Force concluded, "Inconsistent regulation of water recycling by State and local officials leads to confusion and uncertainty in how to design and manage water reuse systems and appears to have led to overly restrictive regulation and added costs, creating an obstacle to achieving the full potential for water reuse." LADWP has first-hand experience with overly restrictive and inconsistent permitting practices in the development of simple irrigation projects in Los Angeles demonstrating the need for a statewide recycled water policy. LADWP concurs with the comments submitted by the California WaterReuse Association, who also strongly supports development of a statewide water recycling policy. Following is a description of LADWP's experience in development of recycled water irrigation projects which we believe illustrates the need for a statewide recycled water policy, along with a description of the mass / salt balance approach for analyzing recycled water irrigation projects for consideration in the development of the recycled water policy.

Water and Power Conservation...a way of life

111 North Hope Street, Los Angeles, California 90012-2607 Mailing address: Box 51111, Los Angeles 90051-5700
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Recyclable and made from recycled waste.



The Los Angeles Experience:

LADWP has invested approximately \$67 million (including federal and state assistance) with plans to spend an additional \$37 million through 2010 on projects that utilize recycled water produced by the Donald C. Tillman Water Reclamation Plant (DCT) and the Los Angeles-Glendale Water Reclamation Plant (LAG). Recycled water from LAG was first delivered to irrigation customers in 1979. LADWP was prepared to begin delivering recycled water to Woodley Golf Course in the Sepulveda Basin, the first customer scheduled to use recycled water from DCT, in 2001. However, after completion of the distribution pipeline and installation of the recycled water meter, this project was stalled due to concerns regarding chloride in the recycled water, which often exceeds the 100 mg/l basin plan objective in the DCT service area (DCT recycled water has an average chloride concentration of approximately 120 mg/l). Los Angeles believed that this project should be able to start up based on Water Code Section 13523.3 which states "A regional board may not deny issuance of water reclamation requirements to a project which violates only a salinity standard in the basin plan." However, the Los Angeles Regional Water Quality Control Board (LARWQCB) staff believed that waste discharge requirements would be needed to address their concern regarding chloride. More recently, the City has started to experience occasional exceedences of the 150 mg/l chloride basin plan objective in the LAG service area, putting future use of recycled water from LAG in jeopardy. The increased chloride concentrations in the recycled water is directly linked to greatly increased reliance on the State Water Project due to reduced imports from the Los Angeles Aqueduct as a result of environmental mitigations in the Owens Valley. LADWP and the City's Bureau of Sanitation have been working with LARWQCB staff since 2001 to resolve these permitting issues, during which time approximately 143 million gallons per year of potable water has been used to irrigate Woodley Golf Course while the recycled water that could have been used for this purpose has been released to the Los Angeles River and wasted to the ocean.

During permit negotiations with LARWQCB staff, LADWP conducted a highly conservative worst case mass balance analysis to evaluate the potential effects of irrigating with recycled water which demonstrated that the chloride basin plan objective would not be exceeded in the aquifer, and that beneficial uses of the underlying groundwater would be protected with a very large margin of safety. Nevertheless, LARWQCB staff insisted that groundwater monitoring would be required to verify the results of the mass balance analysis. This monitoring program would cost approximately \$1.2 million to implement including construction of two new wells, and modifications to existing wells. During the LARWQCB permit hearings LADWP strongly objected to these groundwater recharge project type requirements, and the LARWQCB

agreed to allow recycled water irrigation to begin granting a stay of the groundwater monitoring requirements for 18 months to allow further discussions on appropriate waste discharge requirements for these irrigation projects. The results of this 18-month process will be reported back to the LARWQCB in June 2008 at which time the irrigation permits may be modified.

While these groundwater monitoring permit conditions would be appropriate for an indirect potable reuse groundwater recharge project, watering grass is not a groundwater recharge project. Recycled water irrigation projects are designed and operated to minimize incidental percolation or runoff. LADWP and other members of the water community are greatly concerned about the precedent-setting potential of irrigation project permitting trends in Los Angeles, as they may have a chilling effect on development of new water recycling projects and could put existing projects in jeopardy, particularly for smaller communities who may not have the resources necessary to comply with groundwater recharge type permit conditions rendering their projects infeasible. The State set a goal to recycle one million acre-feet of water by 2010, yet only about half this amount of water is currently being recycled. Local and regional urban water management plans and the State Water Plan are relying heavily on the increased use of recycled water as part of future water supplies. Currently, irrigation use comprises approximately 67 percent of recycled water used in California, and hindering the development of such projects will greatly diminish the ability to achieve these water recycling goals possibly resulting in future shortages of potable water. The fact that the debate over appropriate regulations for irrigation projects in Los Angeles has been ongoing for six years is resounding evidence of the need for the State Board to provide leadership and issue a robust statewide recycled water policy.

The Mass / Salt Balance Approach:

The mass or salt balance approach to analyzing recycled water irrigation projects is a method that can often use existing data and can be performed at a reasonable cost keeping it within reach of smaller communities with limited budgets and resources. This method was presented in detail in the Draft State Water Resources Control Board Guidance for Implementing State Statutes, Regulations, and Policies for Recycled Water Projects (Draft Guidance Document) which was prepared by State Board staff and the California WaterReuse Association with stakeholder input. The Draft Guidance Document includes two examples of how to perform a mass balance analysis, one of which is the conservative worst case analysis performed in Los Angeles. This analysis includes an assessment of outdoor water use in areas overlying a subject groundwater basin including imported water sources, local water sources, recycled water, and any other contributing sources. In cases where water pumped from a groundwater basin is not typically used within the basin itself (as in Los Angeles) then over a long period of

time, groundwater would be expected to reach steady state conditions with salinity concentrations similar to the average of the water applied over the basin. If groundwater is used (recirculated) within the basin, then this should be considered as well, as it may lead to a gradual increase in groundwater salinity. The average historical and anticipated salinity concentration of the water used over a groundwater basin will provide an immediate view of potential long-term salinity trends that might occur in groundwater (an early warning), where relying on groundwater monitoring may not show changes in groundwater salinity concentrations until they are well underway.

In the case of Los Angeles, a minor gradual increase in chloride toward a steady state condition is expected to continue for many years as a result of the change in the blend of imported water with significantly more reliance on higher salinity State Water Project water. Therefore, the use of monitoring wells to evaluate the effects of a recycled water irrigation project under these circumstances would not provide definitive information, but would call into question if and how much of an observed salinity increase was due to a recycled water project or the changed imported water blend. The Los Angeles worst case mass balance analysis assumed that every drop of recycled water used for irrigation made it into the groundwater, and at maximum rather than average chloride concentrations (basically treating irrigation projects as groundwater recharge projects). The results of this analysis predict that over time, the chloride concentration in underlying groundwater might be increased from approximately 31 mg/l to 45 mg/l (once steady state conditions were reached after hundreds or thousands of years), still less than half of the 100 mg/l chloride basin plan objective. When this analysis was performed with more probable conditions and consideration of other planned watershed activities (not just planned recycled water projects) such as capturing and percolating additional stormwater runoff, there was no change in the average chloride concentration of the water applied over the groundwater basin. This mass balance analytical approach demonstrated that recycled water used for irrigation at agronomic rates is a very low risk activity and groundwater monitoring would not provide significant or definitive information. Furthermore, the mass balance approach forces a look at overall basin / watershed activities, which is far more productive when assessing the future health of a groundwater basin. LADWP strongly recommends that the State Board refer to the Draft Guidance Document for details of this approach, as it should provide an excellent foundation for development of associated statewide recycled water policy.

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LADWP greatly appreciates the State Board's leadership in moving forward on the development of a statewide recycled water policy, and welcomes the opportunity to assist in this effort. If you have any questions regarding these comments or if you require additional information, please contact Mr. William T. Van Wagoner of my staff at (213) 367-1138.

Sincerely,

A handwritten signature in black ink, appearing to read "James B. McDaniel". The signature is fluid and cursive, with the first name "James" and last name "McDaniel" clearly distinguishable.

James B. McDaniel
Chief Operating Officer – Water System

c: Ms. Rita L. Robinson, Director, Bureau of Sanitation, City of Los Angeles
Ms. Traci Minamide, Bureau of Sanitation
Mr. Omar Moghaddam, Bureau of Sanitation
Mr. Gus Dembegiotes, Bureau of Sanitation
Mr. William T. Van Wagoner, LADWP